

COLOR NOTES

Tortugas - 1924

June 7, 1924. Bird Key Reef. Gnathophyllum

Clove brown zebra stripes close together, separated by narrow grey white thread thick intervals.

figs + notes

~~Bird Key Reef~~

June 7, 1924. Bird Key Reef

Spider crab

One marked with burnt umber.

Chelipeds translucent, legs mostly
white but spot banded with brown.

Two prune purple chelae translucent.

Rest ? white.

July 16, 1924. *Gonodactylus oerstedii* Hansen

#1. = Almost black olive green white spots. on telson and legs apple green, movable finger heliotrope purple. Ventral part of wall of finger with rose purple suffusion.

#2 = Apple green and black spots with more whitish splotches, considerable sulphur yellow on basal joints of tail fan and sides of carapace, movable finger pale translucent white.

#3 General appearance grayish white, sort of a sage green. Movable finger porcelain translucent white, carpus of other legs and eyestalks apple green. Two distal joints sort of orange ochraceous as are margins of pleopods.

#4 Small, like these with less green and more white, only terminal joint of feet with orange color.

#5 Largest Squilla. Everything fears the big Squilla. Little Squillas and flat crabs, *P. galathinus*, ~~fix~~ five of these huddled in bunch in open dish when Squilla approached them, and other squillas turned and ran ~~xxxxx~~ or else attempted to go on defensive. #5 color general apple green. Squilla snaps dactyls open?

Squillas snap with ball of dactyl against forceps, but without opening dactyl. Dactyl and propodus snap as one out from groove of merus.

July 13, 1930. #8-30

Alpheid: reddish / brown marks on inside face of large chela ^{the} (only one

present). Antennal and antennular

peduncle with same color, gastric area ditto.

Legs and epimera colorless.

Square patches on hinder part of carapace

ditto and bands of color across each somite

with white, ^[or] rather colorless, ^[area] between ^[bands]

Lyredius (Raninoides loevis) same station little greyish across middle, little yellowish brown anteriorly, all so faint that in life almost colorless.

[Alpheid]

Another like this from #7-30

This can be checked against spec. if any color patches (not colorless)

In greater central part of carapace, stomach area except 2 white elongated spots behind eyes [has color] between is wax and gill stone yellow

Legs and epimera colorless

1st somite of abdomen row of spots on hinder margin and double line of 3 or 4 either side of median line

2 + 3. Almost whole of ^{2nd} second and 3d somites covered with spots except narrow white strip at ant. & post. end.

4, 5, & 6 post. half of somite spotted and telson and tail fan

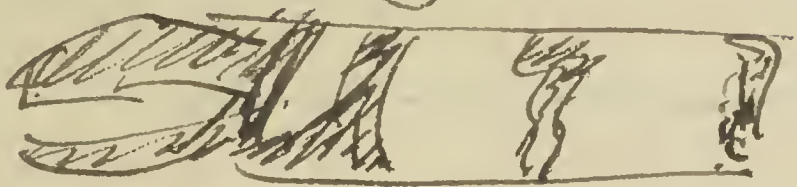
scatteringly so.

Peduncles and scale longitudinally spotted.

Area between eyes and st. line either side of eye marking ant. border of carapace. Carpi spotted, and few spots on ant. end of merus. Large chela banded, fingers colored, small chela with one or two irregular bands and fingers with longitudinal row of spots.

#8-30 July 13, 1930

Alphid reddish brown marks on inside face of large chela, (only one present).



antennae + antennular pedicels with same color gastric area differs.



square patch on hinder part of carapace differs and bands of color across each omite with white, rather colorless between.

Ranunculus loricatus

Sagredius same skin little grayish across middle, little yellowish brown anteriorly all is faint, that in life almost colorless.

in greater extent part of carapace, ^{touching area behind eyes = 2 white elongated spots} ^{white + scale stone yellow} Another like this from #7-3

1 at omite of abd. row spots on hinder margin + double line of 3 on either side of med. line. 2+3 Almost whole of second + 3. omite covered with spots except narrow white strip at ant + post. end. 4, 5 + 6 post. half of omite spotted + legs + tail from scatteringly so.

legs + epimeral colorless

peduncles + scale long spotted area bet eyes + st. line either side of stage markings and border of carapace

carpi spotted + few spots on ant. end. meron large chela banded fingers colored, small chela with one or 2 lines bands + fingers with longitudinal row of spots.

July 16, 1924. Crangon armillatus (M. Edw.)

Posterior half of each somite dark olive or
bice green, similar colored bands as
indicated on carapace, lighter colored areas
of maybe light chromium green indicated in
stipple. Rest slightly greenish suffused
china white.

check
pencil?
Tail fan, last half olive green except distal margin with narrow white
band, except outer limb which part beyond suture line and triangular area at
inner angle, dark almost black myrtle ~~green~~ green, outer edge of outer limb
suffused with faint of pale apple green. Legs same color except either side
of articulation and proximal 2/3 of merus. Antennal scale marked as in
formosus but colored areas oil green, most of small chela same color but with
numerous smaller blotches of white suffused in part with Nile blue. Tips
and part way back on inner margin of fingers orange, actual cutting edge
white. Extreme tips like dactylar claws of this, and formosus pale sulphur
yellow that of the chitin^{of} which they are composed.

Eggs of females lemon yellow.

Large chela, speckled, into big
blotches with olive between specks
~~white~~ white and outlined areas also
white tips of fingers Flesh color

Antennular peduncles mostly olive distally and proximally joints are
edged with white, flagella of both sets of antennae china blue.

July 16, 1924. Bird Key Reef

Actea setigera

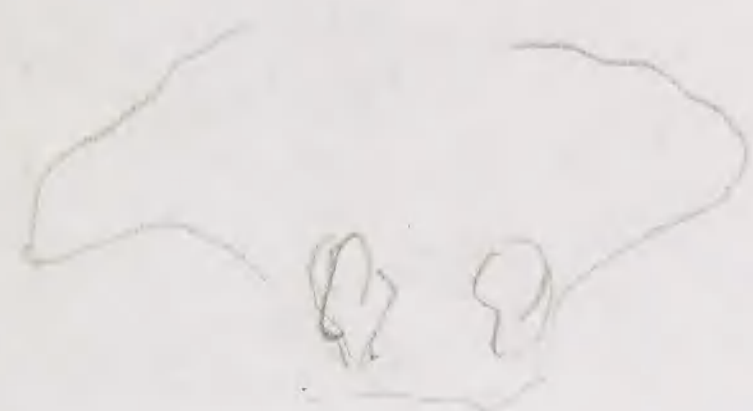
Coral red and orange chrome. Fingers Vandyke brown. Cornea of eye brilliant red like that of prayer bead and from under side shows a black spot.



Sternum bluish china white.

Near postero lateral angles there

are two lighter areas of yellow graded into end of saturn red.



Mithrax pilosus, specimen with fingers from Bird Key Reef, July 16, 1924.

Has right fixed finger broken and unscraped carapace. Hands

July 16, 1924 Bird Key Reef Crangon formosus Gibbes

Ambulatory legs, antennae, and antennules French blue (Ridgeway).

Dorsally body has a median strip, about as wide as rostrum at the middle of its length on carapace, and as wide as ~~greater~~ greatest width of rostrum on abdomen. Stripe stops just before telson, which in distal half has same color. On carapace median stripe is ochraceous, with scattering vermillion (tiny) dots along middle line of length behind orbits. On ~~xx~~ abdomen stripe is medially orange buff, laterally dull, dirty porcelain white.

From median stripe to median lateral line is broad stripe of chestnut - burnt sienna. Median lateral stripe ~~white~~ wavy on lateral white stripe. Below white stripe color is light hazel? spots of chestnut being scattered on a light pinkish buff ground.

*Orbital area for a space as long as rostrum translucent china white, central longitudinal part or area more transparent, shows black eye through, and two splotches of scarlet vermillion, one on ~~hpf~~ upper part of eyestalk just behind cornea and other on inner of orbit.

Large hand has fingers orange chrome same color on ⁿ anterior margin of palm. Palm, olive suffused on either face tawny olive with tinge of yellow. Middle hinder area of finger olive, distal curved margin orange. Dactyls white with wine purple fleck at middle of outer face at base and at corresponding point at distal end of propodus with same colored fleck.

July 16, 1924 Continued

Ventral margins of first three abdominal epimera touched and edged with black. Tail fan largely chestnut edged with which fringe of hairs white distally and at base proximal third except basal eighth almost orange ochraceous, is sort of golden looking. Spine black. Under parts and ~~pleop~~ pleopods white with faint bluish tinge (color of legs) and faint [?] band on white hairs as in tail fan. Antennules same color as median ^{stripe?} ~~strip~~, antennae as adjacent stripe. Distal third of antennal scale like antennules, proximal half of outer margin and basal joint like adjacent ~~xxxx~~ stripe. Balance and most of blade white like ocular area.

July 16, 1924. Bird Key Reef. *Petrolisthes galathinus* (Bosc) ♂

Ground color of upper surface dark end of U. Ash grey and between that and ~~1~~ light end of Says grey. (Nile Blue, Ridgeway) Median and more raised portions of rugae purple madder like spots of *P. sebae* (maroon, Rid.). Dactyls of ambulatories and distal three-fourths of propodi D.E. Cad. yellow (almost orange, Rid.) with faint tinge of reddish proximally, dactyl ~~striped~~ with the purplish, propodus with a median lateral longitudinal splotch and ventral edging of purple. Distal joints and not striped portions of mouthparts (principally maxillipeds) orange Rid. with greenish tinge to greater part of centers of joints. Under parts marked with auricular purple Rid. Hairs on maxilliped lemon yellow. Hairs of rugae gallstone yellow. Anterior spines of carpus flecked with cobalt blue, about two spots each. Line of two spots side by side paralleling hinder margin of carpus. Similar line from base of movable finger to inner posterior angle of palm.

July 16, 1924 Bird Key Reef Portunus (Achelous) sebae (M. Edw.) ♂

? ^{Windsor} (Windom & Newton) ?
1

General color lighter end of Mars brown and lighter end of burntumber. Tips of fingers like dark end of purple madder. Ridges on carpus, tips and bases of all spines same color, spines except for tips and base white. Antero-lateral teeth ~~max~~ margined and tipped with purple madder with splotch of white on median dorsal surface. Paddles and extremities of other feet tending toward middle of brown ochre in color. Eye spots, cross between purple madder and Indian red, quite dark deep rich color, margined or surrounded by white ring. Anterior margin of merus with long fringe of hair (light brown ochre) long and hiding spines. Areolations picked out in red. Under parts white; pubescence light lemon yellow.

July 17, 1924. Sta. 17 White Shoals. Smaller Synalpheus.

Bright lemon yellow (lacks large claw) all over and all appendages.

Cornea black or dark brown.

fig

Sta. 17, White Shoals. Gonodactylus oerstedii

Citron yellow all over, corneae buff yellow, ovaries or stomach clay color.

Body more or less opaque translucent, legs citron yellow transparent with white flecks.

Smaller opaque whitish squilla without color in same lot.

Palaemon like

Translucent pearl grey carapace with few wavy lines of dots, two rows of dots on eyestalk, red is like maroon. And four or five small amphipods taken.

fig

July 17, 1924 Sta. 17, White Shoals. Synalpheus sp.

All over with poppy red spots, about
 this size and spacing ^{when magnified} by lower powers on
 binocular except for quite a large area
 behind orbital hoods.

2 frogs

Synalpheus makes same clicks as Squilla
 when put in formalin, but could not see if
 done by opening or closing.

Two sides of carapace in dorsal view and $1/3$
 its length, in lateral view areas do not run
 down below line behind space between superior
 and inferior antennal spines. Red spots
 against translucent white ground give trans-
 parent body pinkish or purplish cast.

Legs, antennae, flagella, and scales Nile blue, legs with reddish spots on
 propodi thicker than elsewhere, making them look red. Below suture outer
 branch of tail fan is pale bluish. Large chela pale pea green distally;
 fingers, except central part, ~~Sx~~ Saturn red or orange chrome.

Sta. 17 White Shoals Mithraxes July 17, 1924

Largest Mithrax hazel X vinaceous cinnamon. Oblique lines wide between hind legs.

[Of] next two in size, one is like largest, only lighter, and other is purple red, light ~~burnt carmine~~ burnt carmine. All the other Mithraxes whitish, light salmon or pinkish buff.

Pitho is coral sand white.

Sta. 17, White Shoals. Xanthid

More vinaceous buff, finger chestnut.

Hemus-like

Scarlet vermillion except extreme tips of fingers of chelipeds, dactyls, and propodi of all legs and carpus of second as well, under parts as above, dorsal color may be due to ~~xxx~~ red sponge.

July 17, 1924. White Shoals. *Stenorhynchus sagittarius* 2 taken

Black stripes edged with cream - more
light buff yellow; then two light
walnut brown with narrow of the yellow
between, then wider almost cream, white
between

Figs

Legs cocoa color with hazel stripe
forming anterior and posterior margins.
Fingers of chelipeds mauve X lilac,
extreme tips pale flesh, a lighter
splotch of the bluish color marking
end of basal $1/3$.

Large cream between two blacks runs
back from eye. Bottom lateral black runs
from beneath eye to just above base of second
leg, really between it and third.

July 17, 1924. Sta. 18, White Shoals *Tozeuma carolinense*

Body almost colorless with branching liver brown chromatophores arranged so as to give the appearance of striping.

fig
Legs without any color. Carapace almost white. Rostrum showing color as indicated, especially hairs on lower margin, but color is not thick and heavy, not easy to see. Telson almost all color as is inner branch of uropod. Stripes on other segments indicated by dotted lines.

July 18, 1924. Sand Key. *Clibanarius tricolor*

Dactyls white with red=scarlet vermillion. Propodi azure X Sevres blue, with flame scarlet fleck at base, carpus same blue, blue color has fleck of greenish brown, a dark gallstone yellow distal end of propodus, distal half of carpus suffused with, and merus distally with little _____ cyanine blue. Chelipeds and maxillipeds almost seal brown with possibly a tinge of greenish like olive with straw yellow flecks on spines (spots I guess are really white, look yellow, however), fingers almost ferruginous (rather, orange rufous) with darker central area, also flecked with yellow. Distal joints of maxillipeds dirty white.

Eyestalks blue like propodi, with distal ring of white just before propodi. (tapers to point and disappears at distal $1/3$) which have a greenish yellowish line down middle. Spines of eyescales white, however. Antennular and antennal peduncles and eye scales and flagella, all light, let me say transparent ochraceous-rufous, also movable basal joint of eyestalks. Carapace mostly whitish; anteriorly median, central portion behind frontal white margin, posterior portion of carapace white lines faintly marked with heliotrope purple.

Palaemon tenuicornis from algae, 3 ft. water off shore of Middle Key,
July 18, 1924.

General color ochraceous tending toward orange ochraceous, more yellow than first, more brown than second. Thickly set everywhere with dragons blood red spots, picked out with ~~Chinese~~ Chinese white spots. Corneae both same white, ground color of rostrum same white instead of ochraceous. Tips of antennal scale blades white, row of white dots transverse of first abdominal somite, one median line at end of second, on hump of 3rd, one larger one and few speckles of white surrounding it on middle of ~~third~~ third, telson with 3 white dots in row, anterior one at about middle, posterior one not quite terminal, ends of uropods margined in white, inner one with spot at middle of outer margin, outer branch with outer margin more or less whitish with larger spot at middle of its length. Ventral third of epimera of 4th, 5th, and 6th somites brownish red color of spots or darker. Legs and chelipeds flecked with white chiefly at joints.

July 19, 1924. Sta. #22, White Shoals, *Petrolisthes* sp.?

Ground color faint wine purple, minutely speckled everywhere with crimson. Rugae edged with pale cerulean blue. Spines of front and epibranchial spines and row of dots, spots on anterior margins of rugae, maroon, corneae hazel. Hands more salmon colored, arms more brown chestnut tinged. Spines and carpal margins clear (white) with flesh colored splotch at base of each, same true of marginal spines of hand. Fingers saturn red tipped, minute spines or what appears to be such on hands and carpi maroon X chestnut. Distal fifth of carpus cerulean blue, which runs up on to base of first spine. Ambulatories banded white and carmine X coral red, meral joints a chestnut brown.

frag

July 19, 1924. Petrolisthes ~~spix~~ sp.? Continued

fig

Abdomen duller than carapace with chestnut spots
only, no blue.

July 19, 1924. Sta. #25, White Shoals. Sicyonia species.

Rostrum dorsal spines only of carapace ~~tan~~ and corneae citron yellow or
pale apple green. Antennal scale same green, but spine with white spots
alternating with the green.

fig + notes

Abdominal somites and tail fan flesh mottled with sand gray, fading out to
sand grey just before ventral margin. Eyestalk very ~~pale~~ ^{Pale} flesh.

July 20, 1924. #34, White Shoals. Synalpheus from Loggerhead sponge.

55 specimens, possibly only $2/3$ of number in 6x6 in. dia. sponge.

Eggs salmon color, ~~xxxx~~ as was alimentary tract in several, eyes black but not jet black. Body and chelipeds translucent china or glass fingers edged ~~with~~ or tinged with olive or bluish or gallstone yellow, just faintest touches of color.

One had a bopyrid.

Synalpheus from 35-37.

Looks rose red but = poppy red by Ridgeway. Numerous tiny poppy red chromatophores everywhere so that color to eye ~~looks~~ looks solid.

July 24, 1924. Fort Jefferson moat. *Mithrax spinosissimus* (Lamarck)


 = claret brown, rest reddish yellow, fuzzy ~~xxxxxxxxxxxx~~ sort of rufous, saturn red mixture. Hairs seal brown toward ends of legs. Hands lighter (than shown by Ridgeway) seal brown with cadmium orange spines, extreme tips of which are white.

fig.
Carpus Indian purple above, running little way up on base of spines, middle third of spines orange chrome X carmine. Orbital and frontal spines same color, spines on claret brown areas similar with more a saturn red appearance. Inner larger spines of carpus and merus ~~xxx~~ mostly white with spottings, especially near the tip and tip vermillion. The legs are lighter and darker banded, a dark band about the middle of merus and propodus, and another at distal and proximal end; basal half of carpus only dark, distal light; middle third of dactyl dark, half of claw beyond hairs porcelain white, distal end brown and corneous tip. ~~Exin~~ Fingers of chelipeds distal fourth porcelain white, basal 3/4 raw umber with tinge of bluish (drab gray) where it goes over into white base of movable finger and edges of manus about movable finger touched with cadmium orange. Sternum white reddish hair, under parts of legs as above.

July 21, 1924. Fort Jefferson. Grapsus grapsus.

Carapace finely mottled with plumbeous or cinerous. Legs especially first & two pairs just reverse ground color cinereous or even ~~xxxxxxxxxxxx~~ as light as lavender gray. Color on body and legs an almost black (dark) prune ~~xxxxxx~~ purple, carapace more like black. Legs a deep black maroon=better Indian purple. Spines on dactyls of legs and distal edges of joints as well as anterior margin of ischium and proximal $1/3$ or less of anterior margin of merus touched or tinged with orpiment orange. Hands dark pansy purple, raised line and tubercles almost carmine. Distal $1/3$ of fingers white tinged with the red. Corneae blackish slate.

July 22, 1924. Sta. 40

Alpheid, brownish stippled on dorsum of abdomen and on antennal appendage except scale, also on chelipeds but not on lower outer two-thirds. Eyes black under white carapace, stomach yellow like eggs—orange ochraceous.

(I think I have color noted one like this before.)

July 22, 1924. Sta. 40. Xanthid

Rufous X dragons blood red eyes black; fingers hair brown.

July 22, 1924. Sta 40 Portunus (Achelous) sebae

Two little Portunids = vinaceous buff. Smaller with darker spots of clay color.

July 22, 1924 Sta. 39

Lyreidus, china white stippled on meral joints like on abdominal somites with maroon. Carapace:

fig. & notes

July 22, 1924. Sta. 41. Portunus (Achelous) sebae

Portunus colored much as smaller spec. from Sta. 46. Carapace more buff pink, touched with cinnamon rufous.

fig. & notes

Maroon purple X lake red fringes of hair on carpal spines, same color on ambulatories, however, sort of wine purple.

July 22, 1924, Sta. 41

Largest Goneplax with sort of heliotrope purple carapace; legs, chelipeds, and under parts white.

July 22, 1924. Sta. 41.

Smaller Xanthid more or less vinaceous buff. Hinder part of carapace and meral joints of legs mostly white.

July 22, 1924. Sta. 41

Peneids marked in reddish. Abdominal somites all margined with reddish dots. Distal end of pleopod segments, all of uropods, entire surface of inner branch; only outer margin of telson, and entire margin but central part of outer branch of uropods.

fig. & notes

Carapace marginally stippled, rest closely so, blade outlined only at tip. Antennal and antennular peduncles quite reddish,

legs longitudinally stippled with but one or at most in some parts two rows of stipples. Third maxilliped with only a few irregularly scattered spots.

July 22, 1924. Sta. 41 Peneids - Continued

Pubescence on carapace is the faintest kind of vinaceous buff, enough though to make carapace look darker than china white of spine of scale and abdomen. Flagella and first and second ~~antennae~~ antennae stippled like legs, only more so and not in a line.

July 22, 1924. Sta. 41. Matuta

Carpi, meri, and upper margin of hand faint rose purple, and eyestalks. Carapace lavender X french grey with higher knobs and ridges touched with dragons blood red. Upper half of face of hands salmon. Distal ends of ambulatory meri and anterior face of carpal joints ~~mmf~~ suffused with light vinaceous cinnamon, same for upper surface of carpal spines except larger is white for distal fourth. Under parts china white, as is posterior region indicated, of carapace, posterior spine, and central area of epimera.

July 22, 1924. Sta. 22 41. Goneplacid

~~Under parts white, faintly tinged with olive buff~~

Stippled with orange vermillion on higher parts of anterior half of carapace, more strongly so on upper surface of carpus of cheliped, upper antennal margin of merus of chelipeds and palm $1/3$ down on inner face and $3/4$ down on outer face, very lightly (salmon), on distal ends of meri of legs and on hinder surface of carpi and less on propodi. Fingers bay, ~~xx~~ on tips, cutting edges, and ~~xxx~~ hinder transverse margin of dactyl madder brown. Splotch of madder brown inside of either hand behind fixed finger. Under parts white, faintly tinged with olive buff.

fig

July 22, 1924. Sta. 43. Pisosoma

Chelipeds and carapace marked with brick red and white. Tips of fingers white. Carapaces variously marked. Legs and abdomen and under parts orange rufous, dactyls and extreme distal end of propodi white.

fig

July 22, 1924. Sta. 43. Parthenope

Carapace buff pink, with fine hazel stippling on higher parts and especially along orbital margin. Upper surfaces of chelipeds vinaceous buff suffused along median line of merus with hazel, with darker hazel spots at and up on bases of median spines.

fig & notes

July 22, 1924. Sta. 44. Crangon

Abdomen splotched (spotted or stippled splotches) with poppy red carapace and chelae with coral red, all faint, as animal is nearly all white, just stippled with fine dots of color. Eggs cadmium yellow. 3 specs. of this.

fig

Three blue-legged Crangons are from tide pools, Bird Key Reef.

one? On Sicyonia with green rostrum, as previously color noted. 2 Specs.

One white Squilla ciliata ? with few faint grey markings on epimera.

Heterocrypta, tiny spec., part "bay" color.

fig

Pinnat? Two synalpheids from red sponge Indian yellow, eyes drab brown, inner parts opaque, shell lighter and transparent. Legs white and large chela transparent yellow fingers and distal end of palm touched with cadmium orange.

July 22, 1924. Sta. 44. Stenopus

fig + notes

July 22, 1924. Sta. 44. Long armed Munida

White, tinged with faintest verdigris green, legs white with faint touches Chinese orange. Carapace with two longitudinal lines of same. Abdomen with three rostral spines same, distal ends of joints of chelipeds same, and fingers same.

2 specs., one without chelae.

July 22, 1924. Sta. 44 Short armed Munida

Coral red X madder brown, antennules and antennae Naples yellow, dactyls and distal end of propodi of walking legs lemon yellow with half of propodus following it maroon.

July 22, 1924. Sta. 44. Nodose Xanthid. Lobopilumnus

Above sand filled gray pile granules and knobs are ochraceous rufous X madder brown. Inner sides of meral joints of legs and chelipeds smooth and much white with whitish spots.

July 22, 1924. Sta. 44 Portunid Cronius tumidulus

Variegated hazel and rufous.

July 22, 1924. Stat. 44. Mithraxes Mithrax (Mithraculus)

Smaller, vinaceous buff.

Larger, ochraceous rufous, fingers at middle of length tinged with lilac, eggs pansy purple.

July 22, 1924. Sta. 44. Microphrys

Cleanest spider = Saturn red X orange chrome

Largest, dirty one = brick red

Smaller, chelipeds orange ochraceous.

July 23, 1924. Sta. 46. Portunus (Achelous) sebae

One small, sand grey--clay colored mottled carapace. General cast of carapace cream buff X pinkish buff. Proximal side of each spine of merus with crimson spot and crimson line paralleling posterior white ridge. Inside of

hand not colored as in specimens from Sta. 41, July 22, 1924. Fingers marked inside with crimson. Carpus has spot of crimson at articulation. Fringe of hairs on carpal spine between crimson and pomegranate purple.

Back of spine crimson spot. Carpal spine has a longitudinal splotch of color on posterior surface which on anterior is a clay colored one, as though color showed through.

Crimson spots where last legs articulate.

fig (leg)

figs + notes at bottom this m.p.

July 23, 1924, Sta. 49.

Canary yellow alpheid from Pholad borings in coral or yellow sponge on coral, bit of which was saved. Minutely speckled with pinpoint black dots or maybe red ones which look black. Abdomen with three narrow longitudinal white lines, one median, others lateral, one each side, about half way up the side ending on anterior half of sixth somite and running distinctly $1/4$ way on carapace, but quite indistinctly on anterior, $3/4$ median stripe does not run on to carapace.

Eyes black, antennules, antennal peduncles, and hands without black specks. Antennal flagella = saffron yellow X orange buff (a sort of brownish yellow, ochraceous maybe). Fingers of larger hand and distal margin of palm tinged with flesh color. Ditto of smaller, more a gallstone yellow.

Small crab in vial with shrimps noted on label.

July 23, 1924. Sta. 49. Upogebias in Pholad holes in coral head; some of shells saved.

Largest one with eggs; eggs cadmium yellow, as seems to be alimentary tract in abdomen above them, few tiny carmine speckles on surface. Carapace very slightly tinged with peagreen, fingers of chelae and distal ends of palm faintly flesh tinted.

Smallest without eggs, carapace tinged with lavender, larger with gallstone yellow. Yellow runs back in first two segments of abdomen like liver lobes or similar color is inside.

Anterior portion tinged reddish by poppy red speckles as shown.

July 23, 1924 Sta. 49 - Continued

One little red alpheid like those in loggerhead sponges.

Porcellanid already color noted, like n.sp.?

Parrot?
 Little tiny galatheid with ferruginous eyes and red speckled, white body. Crimson ? maybe speckles on legs and chelipeds arranged somewhat as to form bands of color.

July 23, 1924. Sta. 51 Alpheid

Ground color transparent olive yellow closely ^{beset} ~~best~~ with vermillion spots, legs and tail fan ditto. Corneae indigo (but blacker) blue. Antennules, antennae, and spine of scale but not blade rufous, blade transparent white. Large chela marked with hazel, white, and black ~~liver~~ liver brown, small chela hazel.

2 figs + notes

July 24, 1924. Loggerhead Stations 15, 16, 17 combined.

Synalpheus from tubular sponge.

General ground color of shell whitish palest pale blue x Nile blue with red spots all over except behind eyes.

Eyes clay color. All rest of carapace

and abdomen spotted. Antennal and

antennular peduncles, scales, etc.

and rostrum and ocular hoods not spotted. Antennal flagella carmine, and longer

free antennular flagellum ditto, fused part of both and shorter antennular

flagellum blue. Basal part of antennal flagellum though partly red has pale

blue running up onto it for a portion as long as the fused antennular flagellum.

Inner works behind unspotted ocular areas Paris green. Joints of legs spotted

on both sides, meri only on upper margin. Tail fan like body. Distal end of

hand and fingers of transparent blue, chelae touched with yellow brown (raw sienna X gallstone yellow).

July 24, 1924 Loggerhead Stations 18 and 19

Green synalpheus from #19.

Legs, small cheliped, and antennal and ~~ant~~ antennular peduncles grass green.

Carapace and abdomen apple green.

Eggs gallstone yellow.

Large chela missing.

Crab coral sand grey.

fig & notes

July 24, 1924 ~~xxx~~ Panulirus from dock piles.

Between Vandyke and clove brown. Tail fan above with Verd^{iter} blue. Abdomen with a median stripe of dark ecru drab over the brown.

fig

epimera of carapace spotted with white.

Legs banded light (nearly white) and dark. (Vd X clove) brown.

July 25, 1924 From Fort Jefferson ^{near} pier at entrance outside.

Several grass green Mithrax.

Small, grass green on anterior half of carapace, posterior half grayish like legs.

One triangular spider 1/2 inch long, epimeral portions of carapace maroon, upper body sand gray due to growths on it.

fig + notes

5 squillas:	One sand grey)	All with white markings and some black spots.
	One prouts brown)	
	Two sage green)	
	One olive green)	
)	

One larger spider maroon purple and wine purple. Palms almost Indian purple, running or turning into maroon on ~~figs~~ fingers.

fig

One Clib. tricolor

July 25, 1924. Near pier at Fort Jefferson entrance, outside.

2. Crangon armillatus already color noted. Distal half of fingers of smaller chela orange, large hand marked with Verditer blue.

Crangon spec. general ~~xx~~ ground color sort of pale sage green with white line where each abdominal somite folds under preceding. Green thickly spotted with red spots composed of tiny red specks (crimson?), this being only color on legs. Large chela mottled on inner upper surface with gallstone yellow and greenish white. Upper margin and movable finger color is orange ochraceous, outside of hand white. Corneae transparent hair brown, antennal and antennular peduncles like body flagellae colorless. Carapace is darker and has sort of an apple green tinge, stomach an olive colored lump.

~~Three little Synalpheids, only one~~

Three little Synalpheids, only one has both claws. Abdomen and claws seem pinkish, carapace because of included organs apple green. Body slight opaquish white with tiny crimson or madder brown spots.

Palaemon tenuicornis from gulf weed by pier raw sienna X ochre yellow with lilac grey white spots, and numerous dragons blood red X burnt sienna red tiny chromatophores variously aggregated. The smallest of five specimens has them so multiplied laterally as to form a stripe from base of antennal spine under eye to base of outer uropod.

~~Other~~ Other two small ones have each side of abdomen red brown on side of third somite, one side of fourth, nearly all of fifth above and below except for a little dorsal median area, whole of sixth and tail fan. The color when thus aggregated looks chestnut.

Occasional small specimens are all chestnut and so dark as to be almost bay. The legs of large and small specimens are virtually colorless, with few opaque white spots.

July 25, 1924. Portunids from floating gulf weed.

Mottled with mummy brown, raw umber, white, and olive and tawny olive.

Legs lighter in some specimens, in others olive with white spottings.

Fort Jefferson moat, from Halimeda July 25, 1924

Numerous small colorless shrimps brown (faint bistre) or greenish (faint chromium green) spotted with

possibly olive buff in color

Any number almost can be washed from bunches of Halimeda. Were dead when washed out in laboratory.

Two in separate tiny vials are transparent in life, both with opaque white specks or rather spots scattered over ~~the~~ the body, especially aggregated over alimentary tract on carapace on eyestalks, and antennular peduncles, a few on antennal scales. The one is clear as glass but for white spots which more or less (alone in a dish) reveal its presence, under a glass the frontal margin of carapace region except rostrum, and ant. first and second appendages and stomach ~~xxx~~ region is faintly tinged with merest touches of parrot green; a few widely scattered olive green chromatophores on abdominal epimera. Legs transparent with few white spots along them.

The other is similar except on carapace there are a few faintly olive green chromatophores and on the abdomen a few olive ones, but enough in each case to give the animal quite a dark appearance though it can still be seen to be ~~trans~~ more transparent than otherwise. Eggs of this specimen colored faint greenish brown like body, especially abdomen not noticeable in life.

July 25, 1924. Fort Jefferson ~~xxx~~ moat from Hypnea

Amphipod, more or less apple green with tinge of oil green anteriorly and dorsally epimera and legs nearly colorless spotted with opaque white and olive. Antennae may be oil green spotted with white.

July 25, 1925. Fort Jefferson moat from Hypnea.

Palaemon transparent except for a few opaque white spots and Prouts brown lines.

2 figs & notes

Rem? Legs transparent with orange spot at distal end of each joint except propodal and dactylar second legs has a spot at base of sinus between fingers, first legs without opaque white spots and also thick part of united flagella antennal peduncle with one white spot at end of peduncle.

fig

Blade of antennal scale with row of white with with tinge of lemon yellow spots down middle of corneae olive buff partly transparent. Eggs faint green. ~~20x~~ On dry table gave three inch ~~high~~ high hop and 3 inches to side.

July 26, 1924. Bird Key Reef. *Pitho anisodon* (von Martens)

Variously mottled with parrot and bice green, with narrow median stripe on anterior half and much wider stripe or area so wide on posterior half of carapace of white (pea) green.

Legs banded with parrot grading into bice on edges of bands, and white speckled with bice green.

Over carapace and especially on posterior and postero lateral regions are numerous white spots, even over median pea green area. Spots are not wholly white, but with little greenish tinge. Under parts mostly white specks on chromium green ground. Hands chromium green with malachite green marbling on upper margin, cutting edges and extreme tips of fingers white; some white spots near proximal angles of upper surface of palm.

July 26, 1924. Bird Key Reef. *Leptodius floridanus* (Gibbes)

General color sort of a pea-sage green with scattering of bay (brown) specks. Under parts olive buff X buff. Fingers rich black; extreme tips of teeth and margins of cutting edges of tips of fingers white. Hairs sage green. Upper margins and hinder surfaces of legs speckled and mottled with specks of maybe clove brown X olive. Frontal region between eyes and hollows of antero lateral surface and distal inner hollows of carpus with suffusion of rose purple as though overgrown by a purple nullipore. Outer upper half of hands and inner upper half and upper margin of chelipeds more heavily mottled with the clove brown X olive than legs. Distal portion of palm, near base of sinus between fingers with a faint suggestion of tinge of naples yellow. Unmottled inner portion of hand almost white. Corneae cinnamon rufous or Chinese orange.

July 26, 1924. Bird Key Reef. *Eriphia gonagra* (Fabricius)

Whole animal strongly tinged with Naples X olive yellow, especially insides of legs and chelipeds, and hinder part of carapace. Higher parts and nodules of anterior part of carapace touched with olive green X olive. Grooves and lower parts of ant. port. carapace plumbeous. Middle third of nodules on ant. lateral portions of carapace Naples yellow. Nodules on ~~xant~~ upper surface of carpus and upper 1/3 of outer surface of hands on top and distal part of sides olive X olive green. Those of lower 2/3 of outer face Naples yellow. Under parts French grey, between nodules on hand and carpus lilac grey. Three nodules on distal margin of carpus Naples yellow. Abdomen distal half of abdominal somites whitish, proximal half dull Naples yellow. Fingers rich chocolate, large basal tooth of movable finger and basal two of fixed ~~xx~~ finger of larger hand distal half white. Legs speckled in transverse bands olive X olive green. Cornea olive green X olive.

Microphrys bicornutus (Latreille)

Mithrax coryphe (Herbst)

Mithrax sculptus (Lamarck)

Mithrax pilosus Rathbun

Mithrax spinosissimus (Lamarck)

Macrocoeloma trispinosum (Latreille)

Leptopisa setirostris Stimpson

Podochela riisei Stimpson

Pitho anisodon (von Martens)

Thoe puella Stimpson

Cymopolia sica (Milne Edwards)

July 27, 1924. Washed from seaweed, Fort Jefferson moat. Large Xanthid =
Leptodius floridanus.

General color of carapace mouse grey X smoke grey. Two outer orbital teeth plumbeous. Hands and carpi cinereous with touches of tinge of wine purple between inner carpal spine and propodal articulations, also on inner aspect of hand near dorsal margin. Legs dirty maize yellow plumbeous tinged; dorsal surface of propodus proximally all of carpus, both sides and top, and distal upper margin of merus olive suffused with tinges of wine purplish. Hairs of legs dirty maize yellow X sand grey. Corneae color of carapace, under parts whitish.

July 27, 1924. Washed from seaweed Fort Jefferson moat. Squilla

General color apple X oil green with narrow banding of undiluted oil green marking posterior margin everywhere with fine Chinese character like markings of whitish greenish grey especially in bands across carapace, posterior margins of abdominal somites and tail fan; legs and eyestalk unmixed apple green, inner branches of tail fan and distal moiety of outer branch oil green. Hairs of outer margin of outer branch of tail fan saturn red. Other hairs of tail fan practically colorless with maybe the faintest flesh tinge. Corneae white spotted on outer transparent shell, inner core has coral red specks on
 chinese orange ground with two seal brown
 stripes on longest side of core

Slender protruding spines of telson alternately white and green.

Grass green splotches on proximal end
 of telson. Color deepest anteriorly,
 fading out posteriorly on ~~xyz~~ splotch.

July 27, 1924. From rocks east side Loggerhead Key. Three Xanthids.

Largest and smallest colored as floridanus noted for Bird Key Reef,
July 26.

where?
Middle sized one grayish with more bluish markings on higher parts of
carapace. A blue fleck (dark marine blue?)

Pitho as color noted July 26, 1924.

July 27, 1924. From rock east side Loggerhead Key. Epialtus.

fig
Spent most of time lying on back as though dead or hanging to under side of
rocks or to side by hind legs and tilted back. Perfectly happy on back, would
stay as long as I ever watched him. Had thought him dead several times. Right
side up had difficulty seeing upper surface due to tilting habit,
45 or more degree angle.

Legs all mostly prouts brown except all but proximal half of merus ~~xx~~ of
2 left ambulatory and all but merus of 2 right ambulatory ~~and x x x x x x x x x x~~
which are sort of an olive yellow.

figs + notes

July 27, 1924. From rocks east side Loggerhead Key. Epialtus - Continued

Abdomen drab, under parts of frontal region olive yellow speckled with a little olive. Corneae drab, eyestalk striped brown and olive yellow, almost white. Antennular flagella yellow except distal half of joint before yellow flagellum, that distal $1\frac{1}{2}$ = prounts brown.

July 27, 1924. Loggerhead rocks, east side. Synalpheus.

Carmine speckled body, pale blue chela and legs. Apple green fingers and distal margin of hand.

Specimen without large chela similar. Carapace tinged with apple green, eggs parrot green, abdomen faint bluish, of course red carmine spots over all. Legs pale transparent blue, one ventral half dorsal half poppy red. Chela same.

Fig. 4 notes

Several Crangon formosus.

4 Crangon with lighter pea green or darker olive X olive green body finely speckled with wine purple. Large chela whitish irregularly marked with chromium green in case of lighter specimen (3) and olive X olive green in case of single dark spec., which is possibly also the largest. Darker one did not lose claw in alcohol.

July 27, 1924. East side Loggerhead rocks. Grangon - large with speckled claw.

Body of largest seems wine purple ground closely speckled, gallstone or gamboge yellow. Two others more a gallstone yellow ground speckled with olive green, carry wine purple specks in turn. Legs pale wine purple or pale madder brown. Antennal and antennular peduncles like body, scales too. Flagella pea green. Stomach region of carapace tinged with apple green. Chela general orange rufous cast, gallstone yellow X olive cast posteriorly speckled with white showing faintest trace of Nile blue.

Finger tips of large chela pale flesh.

Use legs of second pair with articulated carpus to feel and work over the back around eyes and rostrum, etc. and over the other legs, cleaning. Can see need of such an

fig
~~xxxxxx armillatus xxxxxxxx~~

appendage in otherwise stiff legged animals.*

One armillatus, cross banded with blackish green in vial with Synalpheus.

* What about shrimp that don't have such jointed ~~or~~ second legs?

Palaemonidae many are fresh water. What about pontonids though?

July 27, 1924. Rocks east side Loggerhead Key. Petrolisthes, black & white

Whitish; carapace with clove brown spots, black to naked eye with intermediate spots of ochraceous, which also tinges median $1/2$ of carapace transversely.

Hands, arms, and meral joints of legs and frontal region (anterior fourth of carapace) also spotted with clove brown, but with bluish turquoise tinge which makes ochraceous spots look slightly greenish.

Abdomen like carapace only more black & white. Last two joints of maxillipeds orange chrome, also flagella of antennules, antennular peduncle pale transparent sage green. Third joint of maxilliped from distal end whitish like carapace but with several clove brown stripes on upper dorsal ~~xxx~~ margin when extended.

Fifth pair of legs is unfolded and used to brush the others off.

May be Galathinus; if so, whitish color phase. Have bottled separately a purplish one, and the black and white ones.

July 28, 1924. Bird Key Reef. Two Xanthids color noted, tied together.

Larger one grey, corneae grey, legs grey speckled and mottled with olive, fingers clove brown.

fig 1

Smaller grey with few markings of seal brown. Legs as in larger.
Corneae ferruginous. Fingers clove brown

fig 2

July 28, 1924. Bird Key Reef. Portunid.

Carapace mottled grey, bice green, pea green, oil green, olive buff, tawny olive, and drab. General cast bice green with tawny olive markings anteriorly, in center some slight suggestion of ~~ye~~ gallstone yellow. Corneae grey white.

Legs translucent pea green, speckled with bice, dactyls of ambulatories pale blue for little more than proximal half, distally vermillion.

Fig 1 notes

Paddle with little touch of row of crimson spots along outer margin forming a little aggregation of specks at tip.

Fig

Cheliped more bice grey and pea green mottled, former predominating.

2 figs + notes

July 28, 1924 Collecting on rock on east side of Loggerhead Key.

One Portunid must have been washed from several bunches of seaweed brought in; ~~from the~~ not noticed until stuff was emptied in Lab.

Carapace, eyes, and eyestalks, sort of a coral and grey—more or less of cream color mottled with ecru drab and little olive buff and clay color, with few scattered in groups of 3 or 4 tiny specks of cinnamon rufous. Teeth of antero-lateral margin except two next to eye with small ~~px~~ splotch or stain of cinnamon rufous on upper surface and anterior margin near tip of spine.

2 figs & notes

After being kept all night and put in finger bowl next morning female shed all her eggs. Eggs good bright orange.

July 28, 1924. From rocks east side of Loggerhead Key.

Pycnogonid from red seaweed on rocks. Body, legs and all pale transparent straw yellow, in legs and body with a beautiful antwerp blue core or center strand.

Distal ends of leg joints wax yellow X lemon yellow. Proboscis 1 & 2 sulphur yellow with double wavy stripe of the blue.

fig

fig + notes

Amphipod, second, 3rd, 4th, and 5th segments not counting one with eyes, almost orange vermillion to epimeral line, beginning at this point fades out to flesh to salmon to white. Eggs or egg pouch palest kind of chinese orange. Flagella of 1st & 2nd antenna salmon.

Epialtus-like but narrower = hazel X orange rufous. Darker specimen had gotten out on table at night and died; dry = chestnut.

July 29, 1924. Portunid brought by Mills from Key west, taken from fish trap off Curry's dock.

General color ecru drab. Higher granulated ridges chocolate. Base of teeth chocolate, extreme tips hazel, middle half or little more white. Corneae cinnamon; articulating membrane of eyestalks heliotrope. Frontal teeth almost wholly white, tips with merest touch of hazel. Hind paddle legs marked with touches of French blue and with spots of maroon as indicated.

fig + notes

Walking legs ochraceous, hairs cinnamon rufous with solferino stripes on flattened ridges. Dactyl dark aster purple. Chelipeds as carapace, only granulated ~~rid~~ ridges are Vandyke brown.

fig + notes

July 30, 1924. Long Key. 8~~oz~~oz. bottle of Callinectes.

Carapace an even more or less isabella color above, or wood brown tinged with touches of washed out marine blue in ~~xx~~ hinder median middle of carapace.

Two~~xxx~~ smallest specimens (one is very much smaller) quite grey legs quite white no blue ~~anywhere~~ anywhere not even on inside of fingers. Both larger ones seem to be ♀, white underneath.

Of specimens in vial, schizopods are transparent. Amphipod very pale apple green.

Smallest portunid in vial ochraceous with bay markings on legs and ochraceous rufous on carapace, corneae ~~olive~~ olive green. Specimen without chelipeds (dead) white grey, tips of dactyls faintly pinkish, corneae white (ashy) gray. Specimen with chelipeds ochraceous buff with sand grey markings, corneae white grey, paddles transparent. Dactyls distally pomegranate purple, proximally verditer blue, rest of legs white with faintest traces of the blue. Fingers maroon X crimson on cutting edges and on ventral margins of fixed one to point under articulation of movable one. ~~top~~ Spot of crimson on outer face at end of ridge, running articulations. Under parts of meral joints of legs, pterygostomian region and bases of outer faces of hands tinged with chinese orange.

July 30, 1924. Long Key, seine. *Callinectes marginatus*.

Carapace various shades of green. Legs and chela marked with French blue, tinged with royal purple. Adult male entire inside of hand blue and outside of fingers. Carapace in largest male almost bottle green marked with splotches of buff. Corneae grayish. Paddles Chinese orange X little salmon. Under parts flesh except carpal propodal and dactylar joints of legs and carpus and hand. Paddles beneath as above, margined with auricular purple. Suture lines an olive (greenish bluish olive), carpus chinese orange X flesh.

Larger female more gray, chelipeds bluish inside, fingers salmon X chinese orange, tips pomegranate purple, no blue on outside of hand. Feet paler ~~xx~~ blue, almost Nile blue, articulating membranes like fingers of hands, carapace with regular spots, not splotched. Corneae bice green, almost dark bottle green, on middle and hinder part of somites.

Smaller specimen quite grayish ~~and~~ above though still greenish, base of fingers bluish on inside only showing on outside in males, under parts white in females, tinged with salmon on end of abdomen, anterior part of sternum, and under side of mouthparts. Smallest spec. had no blue ~~ix~~ on finger in larger lot.

July 30, 1924. Crangon heterochaelis? from bunch of Halimeda off seining ground, Long Key.

figs

(will type in notes)

July 30, 1924. From holes in rocks 4 ft. water west side Bush Key Reef, near Long Key.

Two small blackish Xanthids. Under parts slate grey, pterygostomian region and maxillipeds and epistome slate black.

fig

This line does not show in animals, is but drawn to indicate difference between clove black, with slightly greenish -- greenish (oil) suffusions around black spots rather--dots (like darkest parts of oil green) with which it goes over into the more slate black, and slate black spots with mouse greyish suffusions around them. The white on carapace and ambulatories is a sort of faint (light) smoke grey with suffusions round spots as noted. Chelipeds very dissimilar, both shiny black (Rid. black) smaller one with spots that look as though they might be the faintest straw yellow.

Very hardy like most Xanthids, only living things except 1 isopod.

Paraliomera longimanus (A. M. E.)

Spots on large cheliped cinereous. Legs maybe cream buff with Prouts brown spots on them. ^MMerest tips of fingers white, and least bit of ~~h~~ brown before black.

2 figs

July 30, 1924, rocks about Fort Jefferson dock. Two large Mithrax pilosus?

Larger one above looks seal brown toward prune purple. Hands chestnut, ^{wine purple} fingers hazel, tips ^{wine purple} tawny on inside ~~and~~ and beneath white areas on inside of finger cross hatched tips faintest rose red.

Smaller one above brown. Hands olive X clove brown, tips of fingers wine purple. Bases of fingers olive inside, ~~hands~~ hands are olive drab marked with red and white suffused with olive as in larger specimens. Beneath the sterna ^{on larger} are pansy purple. Small one maroon purple marked with white on last ~~seg~~ segment of abdomen and first sternum.

White areas in smaller dotted indicates those in larger spec.

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July 31, 1924. Washed from sea weeds from cracked rocks, Bush Key Reef.

Lysmata. Abdomen striped with dots of iron gray in mid dorsal line.

figs & notes

Podochelydium

July 31, 1924. Washed from sea weeds from cracked rocks, Bush Key Reef.

Epialtus.

Carapace rather uniform Isabella X Fawn color with marginings of straw ~~yellow~~ yellow and burnt umber. Brown shown in black.

2 figs

Legs and chelipeds maroon X crimson with little fleckings of straw yellow on knobs at distal ends of joints; distal ends of propodi yellow and most of dactyl except spot of the red as shown.

figs + more notes

Fingers clove brown shading into extreme white tips. Corneae bay, eyestalks more a heliotrope purple.

Large Xanthid with purple showing through hairs above and especially out bulge of outer surface of hands; purple = auricular purple. Pterygostomian, under side of frontal and orbital and distal third of maxillipeds purple; legs with splotches like transverse bands of purple; fleck of same on each abdominal epimeran and underside of basis.

July 31, 1924. Washed from sea weeds from cracked rocks, Bush Key Reef,
July 31, 1924.

July 31, 1924. South end of Bush Key Reef, just north of channel.

One Thoe puella. Exposed parts of carapace not covered by dirty grey fuzz burnt carmine in color. Carpus and base of hand between burnt carmine and solferino; shading into palm rose purple; shading into lilac on basal two thirds of fingers, shading into the white tips. Pterygostomian region as above. Underparts otherwise greyish white.

Small lumpy Xanthid. Fuzzy sort of a vinaceous buff X cream buff (dirty-fuzzy white). Little ~~the~~ tubercles that show through hazel as is stripe on hinder side of eyestalk, corneae blackish slate; fingers tawny olive shading into the extreme white tips, antennae 1 & 2 russet.

Puella?
Small Mithrax. Underparts fuzzy grey, maxillipeds clay color. Pterygostomian = drab, orbital region hazel below, antennal and frontal region white below. Carpus and merus tawny olive with white tubercles distally. Palms ochraceous, ~~distallyxxx~~ distally cinnamon-rufous and basal half of fingers distal half white. Legs splotched with tawny olive above but color mostly hidden by grey fuzz. Rest wood brown shading into hazel on anterior parts of areas. Two hazel stripes on eyestalk.

fuz

August 1, 1924. Large blue Xanthid from apparently more or less stagnant pools at wide point of dead ? parts of Bush Key Reef.

General color blackish slate, with more or less plum colored cast, or helio-trope purple; hinder parts of carapace and hinder part of carpus of chelipeds mottled with dirty white between cream color and maize yellow as it is in color manual. Hands in smaller specimens often with almost black prune purple splotches along median longitudinal $1/3$, sometimes in larger ones, too. Lower fourth of hands inside and out white, rest mottled with violet (magenta tinged) with reticulations of white. Fingers seal X vandyke brown, tips drab, become lighter towards and white at extreme apices. Teeth of larger hand white. Corneae blackish slate. Underparts white tinged with magenta on sternum (sometimes not at all and with French grey). Region below eyes and mouth parts with pale sage greenish cast flecked with blackish slate.

August 2, 1924. Grapsoids from northern section of Bush Key Reef.

Two little white ones, grey with black specks, eyes of one orange rufous. One with darker (or pubescent) propodi, eyes black. Color more a dark cream buff instead of white, markings darker, too.

Largest in the 8 oz. bottle general color shiny peagreen, eyes black. Indian purple markings on black, rufous touches on articulation knobs of carpus and palm of chelipeds.

Second largest with not only markings but areolations of blackish Indian purple, lighter of same on legs.

Little Xanthid found with Clibanarius tricolor, rose purple X lilac ~~smff~~ suffusions, fingers clay color. Corneae vermillion with suggestion of vinaceous rufous (color of burnt almonds). Legs more pinkish, anterior parts of carapace more purplish.

August 2, 1924. From rocks off south end Loggerhead Key, picked up by Dr. Longley with diving hood. (Notes made in extreme haste, boat waiting.)

Large shrimp transparent with apple green ~~leggs~~ eggs and consequently of an apple greenish cast, with few white specks straw yellow on last three abdominal simites and tail fan.

Small shrimp like large one of yesterday, transparent with white spots.

fig

notes

August 2, 1924 - Continued

Largest amphipod flesh color X coral red except in front of first legs = white, eyes black with white specks, flagellae all maroon purple, legs between flesh and maroon purple with transparent colorless bands. Little amphipod transparent with drab alimentary tract, eggs salmon.

August 3, 1924. Dredge from 10 ft. eel grass and sand area bottom N.W. of Loggerhead Key. Mithrax hispidus, great many, cake urchins, and conchs.

General color vinaceous X vinaceous cinnamon X salmon tinged legs, marked with some poppy red. Tips of longer, more pointed lateral spines white. Post-gastric area and cardiac and post-lateral - branchial whitish, underparts pure white. Chelipeds like carapace. Tubercles on carpus white.

Little red Macrocoeloma, for all like bit of red sponge, when disturbed folds up legs and looks like part of sponge on its ^{back.} ~~back~~ Maybe orange vermillion. Intermediate squilla gray, sort of ecru - drab only light.

Apple green ~~large squilla~~ large squilla, inclining toward grass green with white and grayish markings, smaller squilla 2 inches long decided apple green, legs and flagellae 1 & 2 ant. hinges with orange
(rostrum & one eye gone)

Little transparent shrimp/translucent white, with opaque white specks. Legs colorless, maxillipeds and chelipeds ^{with} ~~with~~ carmine spots, ischia and basis of all legs ditto, as well as basal joint of antennal peduncle and under-side of eye stalk and its articulating membrane. Corneae citron yellow net-work over black cores. Eggs apple green, contents of carapace region clay color.

August 4, 1924. Dredging off Loggerhead N.W. lighthouse $3/4$ - 1 mile, 10 feet.

One purple alpheid about 1 inch long. Small cheliped and antennules blue green, sort of marine blue myrtle green. Second legs heliotrope purple, rest of legs wine purple with carmine spots all over. I believe color noted before. Clear areas behind eyes. Distal portion of flagella wine purple.

August 4, 1924. Dredging on eel grass broken coral and sand patch bottom, 10-5 feet.

Got two Tozeuma. Several small alpheids with bluish claw and anterior part of carapace, claw greenish tipped. Legs bluish and hinder part of abdomen pinkish.

Colorless alpheid, in sep. little vial, eyes, core hazel with black hole in middle, with white network, carapace and abdomen except last three segments clay color, everything else clear chitin, transparent, slightly translucent white with tiny white specks (maybe little straw colored).

← Largest isopod salmon with transverse rows of tiny carmine specks. Similar smaller one opaque white with merest trace of apple green.

Pieces of grey Petrolisthes.

One blue pycnogonid previously color noted.

Little Xanthid with chocolate and hazel markings on sand grey, ecru drab ground. Fingers Vandyke brown.

Largest weed covered spider/oil green beneath, plays dead when you pick him up, for all world like bunch of sea weed. Photo with and without weed. Other, longer-legged spider ecru drab with some reddish seaweeds on top, but mostly oil green ones.

August 4, 1924. Fort moat from bunches of seaweed near intake pipe, several shrimp.

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Lysmata, transparent, with faint straw yellow stripes on carapace, thickly spotted with madder brown and heliotrope purple, stripes on abdomen spotted as above but without yellow ground, carrying in addition French blue spots mixed in with others, transverse stripes noted in an earlier color note on this species of the blue only.

Legs and antennal and antennular appendages chinese orange with some marine blue spots on two distal joints of 3rd max. and lemon yellow spots on outside face of 2 distal joints of legs, chelipeds almost colorless and without yellow.

Palaemon tenuicornis, one colored as netted on gulf weeds, one with *without eggs* largest chelipeds almost opaque white, abdomen from last somite forward to *where does this belong?* ends of ~~ant~~ antennal scales with numerous tiny hazel dots, on sides and tail ~~some~~ fan spots are almost olive and much larger and more numerous to make epimeral regions almost solid color, chelipeds and legs much like back with bands of spots of olive.

Two little shrimps together almost colorless, few little white spots, legs almost invisible; color noted before.

Little shrimp bottled separately transparent with numerous opaque white spots on a faintly citron yellow clear chitin, giving whole a greenish grey appearance, antennular flagellum sort of apple green. Corneae gray.

August 5, 1924. Hauls 4 & 5. Dredged with Mills Dredge, Long Key-Bush Key Reef area, ~~West of Long Key~~ 5-6 feet. West of Long Key.

Tozeuma

Dark; bice green mottled with some white and peagreen, with speckling of a still darker green = oil green. Antennal peduncle chocolate, fading out on base of flagellum to faintⁿ cocoa color.

fig & notes

Peneus, translucent white chitin with seal brown spots all over, but also in a band across anterior 1/5 part of second and anterior 1/3 of 4th somites; and opaque white spots all over with a more prominent single wide row on post. margin of second and third, eyes drab. Antennae 1 & 2 clear, 2 with distant opaque white spots on flagella.

August 7, 1924. Off south end Middle Key, 10 feet, boat dredge.

Puerulus, colorless except for hazel eyes and few white (opaque) specks on epimeral regions.

Fig

Opaque, almost straw yellow (but if so, most faintly so), strand between eyes.

Alpheid with ~~stony~~ above, orange ochraceous all over, deeper on dorsal anterior part of carapace and upper margin of large chela, lower half of large chela almost pinkish, due to fading out of orange, giving reddish (carmine) spots chance to show. These spots are speckled everywhere. Distal margin of palm and fingers almost gallstone yellow (or tawny with a greenish cast).

August 8, 1924. Eeel grass haul, boat dredge 10 ft. off S.W. angle of Bird Key house porch and south ~~px~~ of piles of old ~~foundation~~ foundation.

August 8, 1924. East side of Bird Key Harbor, on edge of shoal, boat dredge, 10 feet.

Spider crab greenish, Dictyoty color on back with grayish hairs. Hands maroon bay, fingers distal half white, underparts in some brownish.

Fig + notes

Aug. 8, 1924. W. side Bird Key, boat dredge, 10 ft., 2 hauls combined. Lots of Diademas and red and white urchins, great many sea weeds, almost solid Hypnea.

Apple green alpheid (Synalpheus) from S.W. side of Bird Key. Cepalic appendages and large chela becoming grass green anteriorly, anterior dorsal portion of palm and distal margin vermillion. Flagellae all azure blue.

One lavender, red spotted Synalpheus without hands.

One flesh colored one.

One small hermit, light maize~~X~~yellow buff, mixture of colors light, except hairs on under side of thick flagellum, these are basally white and distally without color.

Eye stalk white	with wide blue band, distal
joint of antennular	peduncle and basal part of flagella

China X antwerp blue, same true of antennal peduncle, only nearly whole of flagellum is blue with clear annulations marking end of segments. Corneae black with white ring.

General ground color marked with clay colored suffusion on sides and legs and on hands; carapace with 3 spots of clay color along anterior margin.

Dromidia antillensis used

August 8, 1924. East side Bird Key Harbor, ~~19~~ 10 feet, on edge of shoal, boat dredge, 2 hauls combined. Lots of Diademas and red and white urchins, solid haul of weeds, mostly Hypnea.

One Dromia, under black sponge, salmon X coral red = fuzz; tips of fingers white, line of scarlet vermillion at base of fingers demarking end of fuzz.

Little Mithrax-like crab in general appearance sort of a ditry, grey, coral sand, cream buff, with tinges of olive drab, especially on dorsal frontal region of carapace. Legs with suggestion of transverse bars of grayish (fuzz) obscured chestnut. Hands, dactyls and corneae showing color. Corneae shiny china white, with shiny seal brown reticulating lines.

fig + notes

Carapace with some ochraceous buff markings on cream buff ground.

Little Portunid extends arm away from body on side opposite to which he is swimming, and reverses with change of direction.

White with some cream buff markings and vinaceous cinnamon bar at base of finger.

fig

August 10, 1924. From /weeds on rocks, off northern end of Loggerhead Key.

Brown Portunid, general color sort of cinnamon rufous or hazel, corneae ochraceous, paddle itself transparent, legs barred with dirty white, like cream buff. Fingers, except extreme whitish tips, chestnut followed by bar of dirty white running to middle of finger. On fixed finger white bar largely obscured by sort of bluish haze over whole like heliotrope purple, modified by the brown. Is on bases of both fingers.

From holes in rocks, two whitish pinkish alpheids (Synalpheus) ~~with two~~ ~~whitish~~ with distal margin of palm and both fingers of large chela grass green, ditto for distal parts of fingers of small chela, rest of legs and flagellae faintest blue; two larger alpheids, more or less pinkish flesh all over, eggs grass green; and two Crangon formosus. Six specimens in same vial.

August 10, 1924. Off northern end of Loggerhead Key.

Two Portunids from conch shell. Larger sort of right half of salmon buff with olive grey + and X a little indigo blue markings on carapace and carpus and merus of paddles, and same of chelipeds. Ambulatories, two distal joints claret brown, rest of leg Mars brown.

fig. 1. notes

Smaller one badly in pieces over night; looks as though it died and
Both were in one large jar.
larger ate part. \ Smaller one more or less sulphur yellow with tinge of
salmon on higher parts of carapace, chelipeds like carapace, but fingers marked
like larger specimen, smaller claw deformed. Paddles sulphur yellow.
Ambulatories, dactyl wine purple, of which a ~~gin~~ tinge is on the distal half
of the propodus, fading out still more on proximal half, carpus still lighter
like faint lilac, merus about white.

August 14, 1924. Long Key Shoal, from rocks and seaweed picked up in $2\frac{1}{2}$ -3 feet water.

Epialtus, back olive green with lighter oil green patches,
one around tubercles, other behind

Olive green closely speckled with chocolate, to the extent of making legs, which are ~~xxx with one~~ similarly colored, look like mummy x mars brown. Distal ends of propodi and dactyls cream buff X olive buff, dactyls though with middle half with brown band. Of chelipeds only finger tips are whitish. Often plays dead, lying on back. When first put in finger bowl with piece of seaweed hoisted latter up over back, holding it in place with last two pairs of legs folded up. Eggs scarlet, abdomen claps shut between even few movements of eggs within cavity apparently produced by moving about inner branches of pleopods, outer branches ~~from~~ a non-movable screen.

Thoe keeps around on under side of rocks, is burnt carmine like millipores and bryozoa with white spots in two longitudinal rows down carapace, and white dactyls like the white of the coral rock. *frag*

Smooth Mithrax with injury on ~~ifxkargexgahdaxegaxihyxxx~~ inside of large hand, Chestnut X burnt sienna X ferruginous. 2 smaller ones in sugar solution.

August 14, 1924. Long Key Shoals, from rocks and seaweeds, picked up in 2½-3 ft. water.

upper sides of eyestalks opaque white.

Hind and under side of eyestalks scarlet vermillion, / Eggs apple green, hands and carpus of chelipeds and their basal joint and basis of each of last two pairs of legs scarlet vermillion. Third max. with ~~opa~~ opaque white at distal and proximal ends of joints at last two articulations; distal, front end of antennular peduncle with splotch of opaque white down between flagella. Frontal margin of carapace edged with op. ^{opaque?} white, but not rostrum. Middle of carapace with three spots of opaque white in transverse row, last two segments of abdomen and base of telson with opaque white and ~~other~~ ^{outer} limb of tail fan. Otherwise tail fan has a few scattered spots of ochre yellow.

Rest of body appendages colorless.

Corneae on top greenish, then band of faint white, ^{then} ~~this~~ colorless with black core. Tiny alpheid grass green, eggs and chela distally, legs and rest of hand pale blue, spotted everywhere with carmine. Heart oil green with marine bluish ~~xxxx~~ tinge around anterior half of margin.

August 15, 1924. Mid section Bird Key reef.

Reddish speckled; red - maroon, which opaque white on abdominal sternum and showing through transparent body so that it looks reddish barred. Small, tiny, white spots marking hinder margin of abdominal somites.

Carapace with transverse wavy lines. Legs distantly barred with opaque white, some red on proximal joints, basis and ischium wholly red. Back half of cornea salmon, front half transparent with black center spot. Antennular peduncle and flagella white ~~xpatedx~~ spotted.

August 15, 1924. Bird Key, mid section.

Longitudinally striped with burnt sienna dots, legs stippled with ochraceous; flagellae and three max. with dragons blood red, chelae colorless. Otherwise transparent. Tail fan with touches of rufous. One in alcohol and one in sugar.

Fig

Wholly transparent palaemon.

Fig 4 miter

(Palaemon puer)

August 16, 1924. Sta~~z~~. #6.

Cycloes, dactyls and propodal joints ~~xxx~~ citron yellow, carpal joints with auricular purple ~~xx~~ in line on each side united across upper margin proximally. On 1st ambulatories little spot on hind side of propodus. *fig*

fig Merus with a large splotch of the purple on hind side. ~~xxx~~

fig Upper surface of carapace cream buff, spines and tubercles white with hinder two-thirds of larger margined tubercles/with purple. ~~Chelipeds~~ Chelipeds white on outside with some purple spots. On inside white with large maroon spot. *fig*

Hazel spot on middle of outside *fig*
near upper margin of carpus.

Eyestalks cream buff with tinge of maize yellow. Corneae grey with tinge of salmon buff.

Small crab *b* with a sort of ~~xxx~~ tawny ochraceous speckling on a buff ground; looks like vinaceous ~~xxxx~~ cinnamon in a way. Fingers of chelipeds tawny olive, legs grey white with touches of tawny olive suggesting Mars.

August 16, 1924. Large *P. braziliensis*.

Speckled with madder brown or vinaceous ~~fm~~ rufous all over. Rostrum, rostral keel, and rostral teeth, outer margin of outer branch of uropod, keel on last three abdominal ~~somites~~ somites, and hinder portion of tail fan, antennal flagella, except near base where color fades out, outline of antennal scale and basal antennular joint and two distal joints of ~~antennular~~ antennular peduncle cross between madder brown and pomegranate purple (sort of a burnt carmine X carmine), otherwise sort of a milky translucent white. Stomach wine X heliotrope purple; heart farther back near hinder margin of carapace pale oil green, "peduncles" of pleopods pale citron yellow. General body a milky, translucent white. Swimming near surface, took refuge in gulf weed, whence captured.

August 3, 1924. Sta. 3. Munida

Generally ^cvinaceous cinnamon X vinaceous rufous with median vinaceous buff stripe down middle third of carapace and abdomen. Markings on abdomen more a mars brown. Branchial regions of carapace tinged with olive. Dactyls, propodi and fingers of chelipeds whitish almost china white with between a ~~maroon~~ maroon and carmine band. Corneae claret X seal brown. Eyestalks ^{thick ped} vinaceous buff, speckled with carmine. Distal joints and base of thicker antennular flagellum ochre yellow, basal joint of ~~peduncle~~ peduncle colorless. Antennae without color. Hermit after night in formalin legs banded with maroon.

August 17, 1924. *Stenopus hispidus* from coral head north end of Loggerhead Bank.

figs + notes
(see page 1)

August 17, 1924. Portunids from sand by Bender, east side Loggerhead Key.

Figs & notes

Some specimens are much lighter, areas on carapace considerably reduced and lighter, and chelipeds with just a ~~median~~ median spot of color and other legs where shaded transparent and light areas on carapace and legs almost white, cream with just slightest trace of pinkish buff.

Eyes of female *admirum* yellow. Blackest specimen had shadings on hind legs almost dragons blood red, and inside of base of fixed finger about carmine. Black of carapace unites across posterior margin. No ~~drab~~ drab area present.

August 18, 1924. On rocks below Lighthouse pier, east side Loggerhead Key.
 Plagusia

General color underneath hair and pile pearl gray.

Spots on white and basal parts of hairs maroon or a darker brown red, spots are more reddish, hairs more brown. Under hair (in advance) and their tips seem to be crowded under and at end with a gallstone yellow pile (making white areas seem depressed and bounded by raised lines of hair and pile. Pile on legs and along ~~px~~ postero-lateral margins almost oil green. Spines of antero-lateral and anterior margin and eye stalks distally (just before corneae) have ground color, chrome yellow. Same is true knobs on upper side of basis, ischium, and merus and meral spine, distal end of propodus also yellow, and middle ~~raised~~ areas of meral ? suffused with the yellow.

Dactyl, propodus, carpus, and center and middle of upper margin of merus with splotches of maroon also on ischium and basis of last legs. Spottings on anterior faces of legs and chelipeds sort of faded out maroon, becoming a maroon purple. Anterior faces of legs and hands toward dorsal margin tinged with light chrome yellow. Underparts largely pearl (or light bluish gray) becoming touched with faintest straw yellow toward margins of joints.

August 19, 1924 Portunids off west side Fort Jefferson.

Largest is like Key west crab Mills brought me (*Callinectes marginatus*).
 Next in size (*Callinectes ornatus*) is plain drab ^{grey} ~~green~~--rather than X hair
 brown--on carapace, lighter on hinder margin, ~~xx~~ teeth of front, frontal
 margin, lateral and antero-lateral spines white tipped. Chelipeds same
 color, fingers and lower half of outside and inside faces of hands white.
 Inside near base fingers stained with aster purple and back of that lower
 finger is azure blue and articulation behind upper finger on ~~inner~~ inner side the
 same. Anterior margin of merus rich blackish clove brown fading out to
 sepia for XXX area behind that to drab
 grey.

First two legs azure bluish on anterior or upper face, dactyls margined
 and distally scarlet. Third leg mostly whitish as preceding one on upper margin
 dactyl scarcely tipped with faintest scarlet. Paddles mostly whitish distally
 along articulating margins, next to last joint also along hinder margin and
 distal half of paddle pale olive, hinge points with suffusion ochraceous.

~~Third largest Portunid (Portunus (Achelous) depressifrons)~~

Third largest Portunid (*Portunus (Achelous) depressifrons*), surface of
 carapace mottled and speckled and spotted cream buff, olive buff, bice green,
 oil green X olive, upper surface of hands and carpus same, upper surface of
 merus more tawny olive, with tinge of gallstone yellow. Upper margin of
 hand in spots and middle third of carpal spine and basal half of meral
 spines on inner margin maroon X crimson. Teeth of fingers and distal half of
 cutting edges and distal half of hairs on upper margin of movable finger rich
 dahlia purple, inside of tip of upper and inside of ~~xx~~ distal 1/3 of lower
 finger magenta, shading into antwerp blue, shading into primrose yellow with ~~x~~
 tinging of olive buff on proximal third of finger and inside of hand.

August 19, 1924. Portunids - Continued

Hairs on proximal half of upper margin of movable finger ochraceous. Hairs on upper anterior margin of merus white grey. Ambulatory legs, dactyls, propodi, and carpi antwerp blue, shading on proximal half into a pale grass green, near upper margin meri on green shading into the blue (but a light greenish one) on lower two-thirds of merus lower margin of merus white, dactyls margined with dahlia purple and propodus on upper margin and hairs on lower margin of first leg propodus dahlia purple. Near proximal end upper margin of propodus gets sort of ochraceous and same in distal half of merus. Corneae grayish. Distally blue on dactyls gets lighter and purple gets more magenta just before ochraceous corneous claw. Paddle joint pale transparent, almost ~~xx~~ turquoise, blue, margin with ochraceous, next joint; same blue and margins, but down center has a ~~gix~~ tinged line of grass green which is little stronger and suffused over a larger area near either articulation, rest of swimming foot like carapace but with some darker olive X oil green spots.

The 5 smallest portunids are like this, not counting one with broken finger.

Third (fourth) largest (Portunus (Achelous) ordwayi) quite a brownish-reddish ~~xx~~ cast. Carapace and chelipeds a grayish chestnut with french grey cast and spots and ecru ~~ix~~ drab tinges and spots. Legs more tawny, paddle joints only transparent faint ocher yellow with ~~ex~~ ochraceous margins. Fingers distally tawny with white, then band of burnt carmine, mostly crimson, median 1/5 white again and basal two-fifths burnt carmine and crimson, meral and carpal propodal spines mostly white with faint touch of burnt carmine near base in ~~xx~~ ring near tip.

August 20, 1924. Callianassa

Chelipeds between rose pink and lilac (sort of paling rose purple?).

Carapace and abdomen ~~xge~~ generally lavender X lavender grey.

fig. 4. note

Not enough mud in beach sand to dig well. Flagellae, other legs and pleopods and part of outer branch of tail fan behind suture pearl grey.

August 21, 1924. *Mithrax verrucosus*. From Rock off S.E. side Loggerhead Key.
and

Carapace, chelipeds, except hands, ~~and~~ basal $2/3$ of meral joints
crimson X maroon, like deep red morocco leather. Distal $1/3$ of merus and
distal half of distal joints ~~xx~~ with sand (dirty grey fuzz proximal half with
blackish maroon fuzz.

Hands and fingers hazel, becoming dark chestnut toward and on upper
margin. Spooned fingers just before white tips with reddish rose red flush
or tinge, same on knob at articulation of fingers. Naked tips of dactyls,
tawny corneous claw followed by narrow band of between light ochre yellow
and buff, followed by spot of orange vermillion above just before maroon
which begins with hair base grayish like distal half of propodus. Corneae clove
brown.